

SOME UPPER CHEEK TEETH IN *PROPLEOPUS OSCILLANS* (DE VIS)

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ABSTRACT

A recently collected maxillary specimen of *Propleopus oscillans* (De Vis) containing P³–M² is described. This specimen, from the Pleistocene fluviatile deposits of the Darling Downs, Queensland, provides the first evidence of the upper dentition in this interesting potoroine macropodid. It reinforces previous ideas on the relationships of this species to other potoroines.

The fossil macropodid, *Propleopus oscillans* (De Vis) presents numerous features which have interested research workers since its original description by De Vis (1888). Recent work by Woods (1960) and Ride (1964) has been directed towards defining the morphology and elucidating the relationships of this, the largest known member of the subfamily Potoroinae. Results have, however, been limited by the quantity and nature of the referred material available. At the time of Woods's (1960) redescription, only three specimens were known in collections and all were mandibular.

It was thus of particular interest to receive recently a maxillary specimen containing the first three of the permanent cheek teeth, collected from the Pleistocene fluviatile deposits of the eastern Darling Downs, southeastern Queensland. In view of the interest expressed in *Propleopus* it was felt appropriate to describe the specimen and to re-examine the conclusions on the relationships of the genus based on the comparisons of mandibular characters in the light of the new evidence available.

The author wishes to express his appreciation to Mrs E. Ward, who discovered the specimen and who donated it to the collections of the Queensland Museum.

***Propleopus oscillans* (De Vis, 1888)**

(Plate 8, figs. 1–4)

Triclis oscillans De Vis, 1888, p. 8.

Propleopus oscillans (De Vis): Longman, 1924, p. 20.

Propleopus oscillans (De Vis): Woods, 1960, pp. 199–212.

ADDITIONAL MATERIAL: F6675, partial left maxilla with P³–M², adult, Pleistocene fluviatile deposits at Cattle Creek, north of Dalby, eastern Darling Downs, at M.R. 436648 Chinchilla 1 : 250000 sheet, southeastern Queensland.

MEASUREMENTS (mm): P³ length 15·2, maximum width 10·8; M¹ length 10·5, width 9·7 anteriorly, 9·3 posteriorly; M² length 11·1, width 10·3 anteriorly, 9·1 posteriorly.

SUPPLEMENTARY DESCRIPTION: Maxilla known only in fragmentary state. Inferior process of anterior zygoma root broken, but sufficient remains to indicate process positioned posterior to M^1 ; palate perforate, with well defined posterior palatine foramen present; anterior extremity of foramen extends to level of M^1 ; palate relatively narrow.

P^3 apparently bi-rooted, with posterior root very large, obliquely positioned; permanent premolar larger than molars, suboval at base of crown; crest trenchant, oblique, set at angle of approximately 20° with molar axis, slightly convex labially; crown high, with enamel considerably higher anteriorly than posteriorly, and with crest slightly convex ventrally in lateral view. Crest transected by seven sets of strong ridges labially and lingually with development of well defined cuspules along crest; ridges decrease in strength posteriorly, strongly convexly curved anteriorly between crest and base of crown but becoming more sinuous posteriorly, occasionally confluent basally; small cuspule developed posterolabially. Base of crown tumid labially and lingually.

$M^1 < M^2$; molar row apparently straight. Molars brachyodont, subrectangular in basal outline with protoloph broader than metaloph. Anterior cingulum low, relatively broad, short, extending labially and lingually beyond major anteriorly directed ridges from anterior cusps. Strong, sharply defined ridge curves anterolingually from paracone to anterior cingulum while stronger, broader ridge ascends anterolabially to cingulum from protocone; loph between anterior cusps narrow, slightly convex anteriorly. Posterior ridge from paracone strong, sharply defined, curving lingually well within labial limit of median valley to unite with similarly curving anterior ridge from metacone. Slight additional antero-posterior ridge present at limit of valley in M^2 . Moderately broad, strong ridge ascends posterolabially from protocone to unite with similar anterior ridge from hypocone above median valley; accessory ridge curves and ascends anterolingually from below hypocone towards base of protocone delimiting lingual extent of median valley. Valley broadly U-shaped in labial moiety, sharply V-shaped lingually. Loph between posterior cusps narrow, slightly convex anteriorly. Posterior ridge from metacone ascends posteriorly towards base of crown and unites with stronger, broader ridge ascending, flaring and curving posterolabially from hypocone. Posterior fossette well developed. Base of crown bulbous.

DISCUSSION: *Propleopus oscillans* is currently recorded only from Pleistocene deposits in the Darling Downs area, Queensland and from the Wellington Caves, New South Wales (Woods, 1960). However, an isolated lower molar tooth from the late Pliocene Hamilton Fauna at Grange Burn, Victoria has been compared with *Propleopus* by Ride (1964) and by Turnbull and Lundelius (1970), but both authorities, while accepting potoroine affinities for the specimen, prefer to leave its identity at a general level. Bartholomai (in press) has indicated the existence of an additional, possibly Pliocene mandible of *Propleopus* from New South Wales (Mahoney, pers. com.).

In comparing *Propleopus* with living potoroines, Woods (1960) concluded that the mandibular remains were structurally closest to those in *Hypsiprymnodon moschatus* and in species of *Bettongia*. The dentition in *Hypsiprymnodon* has been adequately described in Woods (1960) and in Ride (1961). Certain characters in the lower dentition in *Propleopus* were found to be more closely similar to *H. moschatus*, while in other respects the comparison favoured *Bettongia* or proved intermediate between that in *H. moschatus* and

B. penicillata. The pattern of wear in the lower incisors was shown to be unique to *Propleopus* among the Potoroinae (Woods, 1960). Disregarding considerations of size, Woods (1960) further concluded that gradation between the three genera was not uniform and that their distinctness as identifiable taxa must be maintained.

Comparison of the maxillary remains shows that the posterior palatine foramen, although large in *P. oscillans*, does not extend anteriorly as far as in *H. moschatus* and is more like the condition seen in species of *Bettongia*. On the other hand, the inferior orbital foramen must have opened in advance of P³, low on the lateral surface of the maxilla, similar to the condition in *Hypsiprymnodon*. That in *Bettongia* is normally developed above P³ high on the lateral maxillary surface.

The molar tooth row appears to be slightly divergent anteriorly in occlusal view relative to the sagittal plane and to be nearly straight in the molars preserved. The condition is more like that in *Hypsiprymnodon* than that in *Bettongia* where the tooth row is somewhat arcuate. Deflection of the crest of P³ is, as in lower cheek teeth, slightly less pronounced than in *H. moschatus*.

Structurally the P³ in *Propleopus* is much more like that in *H. moschatus* than that in *Bettongia*. The crown is relatively much lower posteriorly, however, and the transecting ridges are more arcuate in their development. The molars are less ovate in basal outline than in *Hypsiprymnodon* and have much better developed anterior cingula, lophs and accessory ridging, and in these latter features appear more like *Bettongia*.

The morphology of the maxillary specimen of *P. oscillans* thus supports Woods's (1960) conclusion that the species stands closest to *Hypsiprymnodon* among the living potoroinae. Sufficient distinctions are present to suggest that no direct line of relationship can be inferred and that the separation of the taxon at the generic level is justified.

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